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VEGETATIVE REPRODUCTION OF MOSSES IN SOIL AROUND THE ANTARCTIC MOSS COMMUNITY (EXTENDED ABSTRACT)

Satoshi IMURA[1*], Masanobu HIGUCHI[1], Hiroshi KANDA[2] and Zennoske IWATSUKI[1]

[1]*Botanical Institute, Faculty of Science, Hiroshima University, Higashi-Hiroshima-shi, Hiroshima 724*
[2]*National Institute of Polar Research, 9–10, Kaga 1-chome, Itabashi-ku, Tokyo 173*

The soil samples around or beneath the moss colonies were cultured to examine the modes of settlement and dispersal of mosses in Antarctica.

The study site was located in Skarvsnes, East Antarctica. The moss community was composed of two species, *Bryum pseudotriquetrum* and *Ceratodon purpureus*. The colonies of *C. purpureus* were predominant all over the study site. Those of *B. pseudotriquetrum* were less abundant, but loosely scattered in the study site. Two line transects in the direction of north-south (Transect 1) and east-west (Transect 2) were set in the study site. The soil samples were taken at 27 points along each transect at intervals of 0.5 (Transect 2) or 1.0 m (Transect 1). If the sample points were occupied by mosses, soil beneath the moss colonies was sampled. The samples were kept frozen during transport to Japan at –20°C, and cultured on 1 cm thick ceramic wool sheets kept wet with distilled water in plastic boxes. The experiment was carried out at a temperature of 20±2°C under a light intensity of 2000–2500 lux obtained from white fluorescent tubes with 12 hours diurnal light-dark cycle.

As the result of cultivation, many juvenile shoots of mosses developed on all the soil samples studied (Figs. 1, 2). Most of the juvenile shoots were *Bryum pseudotriquetrum* and *Ceratodon purpureus*, both were constituting the moss community in the study site. The juvenile shoots of *C. purpureus* were more numerous than those of *B. pseudotriquetrum*, but *B. pseudotriquetrum* developed from almost all soil samples.

In addition to these two species, small number of *Bryum argenteum* were also observed. Mature plants of *B. argenteum* were not found in the study site. The nearest colony of the species was situated at least over one hundred meters away.

In the study site, no sporophytes of *Bryum pseudotriquetrum* and *Ceratodon purpureus* were observed. The gemmae of *C. purpureus* have been reported by IMURA and KANDA (1986), but they were not found in the study site. Therefore, the juvenile shoots were thought to develop from the fragments of the shoots of these mosses. It is suggested that the vegetative reproduction is considerably important for these Antarctic mosses.

* Present address: National Institute of Polar Research, 9–10, Kaga 1-chome, Itabashi-ku, Tokyo 173.

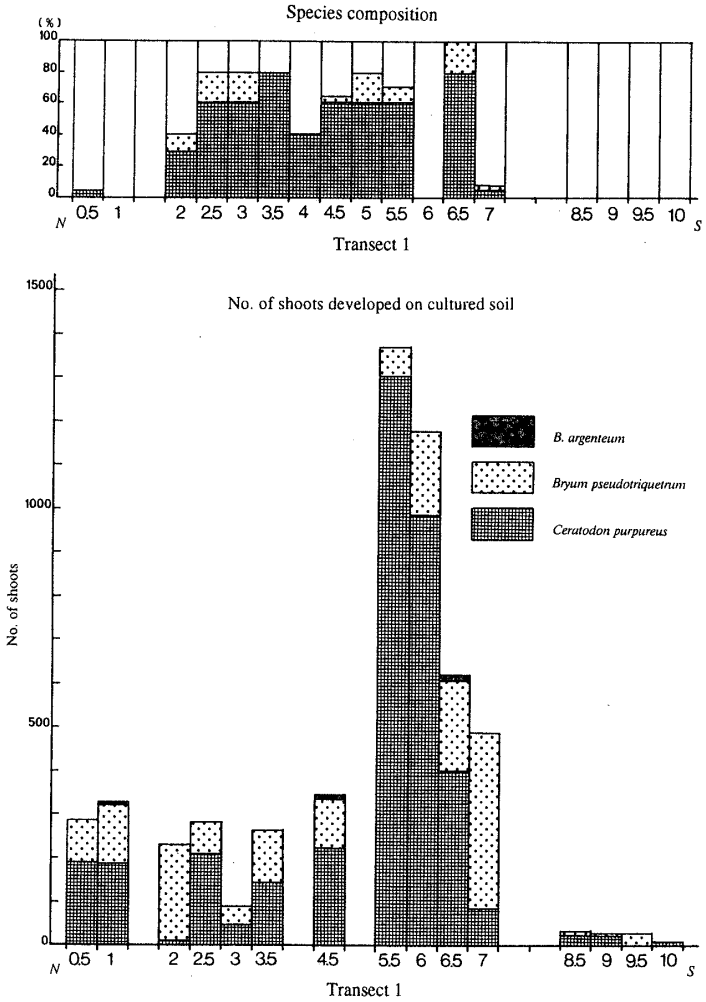

Fig. 1. Vegetation of study site and number of shoots developed from the cultured soil samples, along north-south transect.

Reference

IMURA, S. and KANDA, H. (1986): The gemmae of the mosses collected from the Syowa Station area, Antarctica. Mem. Natl Inst. Polar Res., Spec. Issue, **44**, 241–246.

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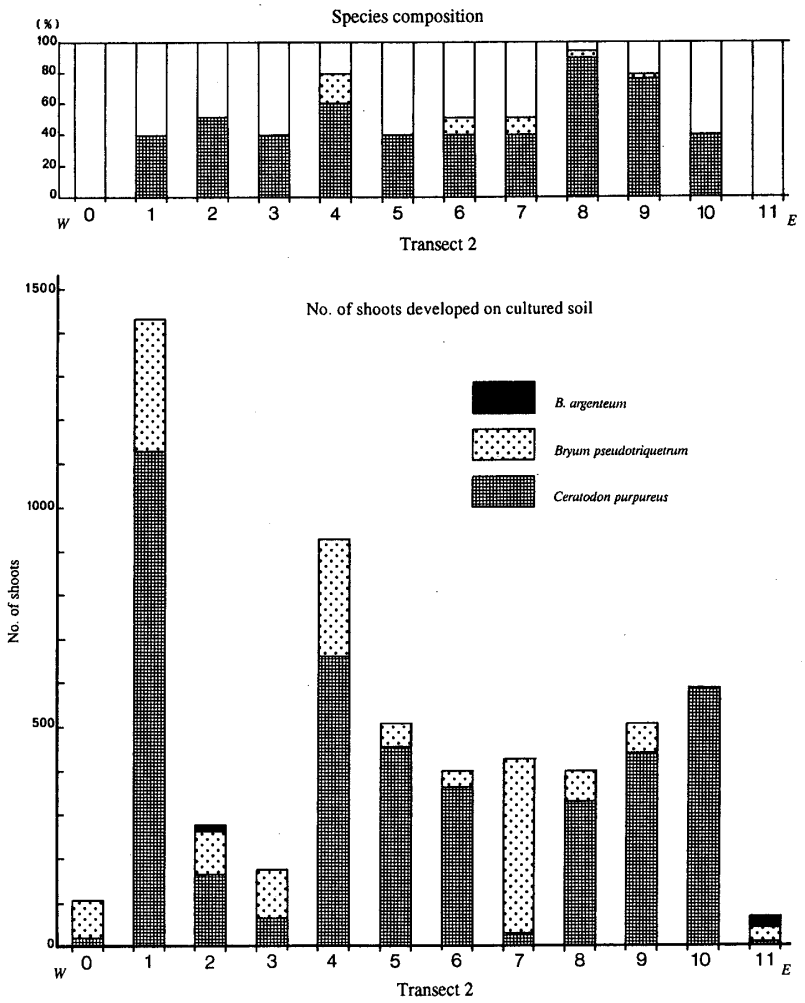

Fig. 2. Vegetation of study site and number of shoots developed from the cultured soil samples, along east-west transect.